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SUBJECT: KENYA'S NEW BROADBAND INFRASTRUCTURE PROMISES GROWTH

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¶1. Summary: Kenya will revolutionize its telecom industry when it initiates its first fiber optic internet connection on June 27. This broadband connection will vastly improve the quality of internet access to Kenya and contiguous landlocked countries. With increased internet capacity, the fiber will improve local bandwidth quality and potentially decrease communication costs, as it complements the existing and widely used satellite communication networks. The increased bandwidth capabilities will improve the competitiveness of existing businesses, create growth in new industries such as knowledge-based businesses and business process outsourcing, and significantly increase access to information for end-users, schools, and universities. The Government of Kenya (GOK) expects foreign investment in the sector to hit $10 billion in 2009. Septel will report how this connection and other broadband initiatives will affect rural and underserved areas. End Summary.

Kenya Gets Connected

¶2. Kenya will significantly increase its internet capacity with the arrival of a submarine fiber optic cable on June 27. The cable is a $700 million private equity venture (three-quarters African owned; the balance held by international investors including from the U.S.) by SEACOM. It is expected to boost bandwidth and communication between the eastern and southern regions of Africa and the rest of the world. The fiber optic cable, the first of three that will arrive in Kenya, will connect to an open access landing station in Mombasa and provide a Point of Presence (POP) to POP solution to Europe and Asia. Customers will be able to connect directly to the SEACOM network at the landing station in Mombasa, POP in Nairobi or through a third-party internet provider. The SEACOM fiber network -- that includes a backhaul infrastructure from Mombasa to Nairobi -- will provide internet capacity of 1.28 terabits per second data transmission, an over 1000% increase in the current average connection to an internet service provider in Kenya. In anticipation of the fiber link, the GOK and various private sector entities have installed national fiber infrastructure networks to connect to the SEACOM network. The GOK has completed all but 100 km

of a 5000 km national fiber system to bring the improved communication capacity to Kenyans. The government's national fiber infrastructure extends the international link from Mombasa to Nairobi, Thika, and Nakuru, and it has linked 31 government ministries to provide high speed data connectivity.

¶3. Currently, the Indian Ocean's eastern Africa seabed is the only one in the world without an undersea fiber optic cable. The Kenyan coastal shoreline has the capacity to receive 10 cables, and the GOK plans to maximize this capacity to become a regional communications hub. Landlocked countries such as Rwanda, Burundi, Southern Sudan, Ethiopia and Uganda are among those that stand to benefit from the East African routed cables. In Kenya, the average end-user pays $4400-5300 for stated 1 Mbps throughput and receives 512 kbps - 700 Kbps throughput. Most service providers sell on a shared/contention basis, not dedicated bandwidth, resulting in oversubscription, low quality, and unreliable bandwidth. With the introduction of fiber optic infrastructure, prices should decline to $100 - $200 per 1 Mbps per month. While this is vast improvement over current prices, it still exceeds an international average of $3.33 per 1 Mbps. Current internet infrastructure relies on satellite communication with inherent challenges such as cost, bandwidth limitation, and latency, all of which severely limit businesses, end-users, government agencies, and universities. A megabyte of satellite-delivered bandwidth costs ranges from $5,000-7,000 in Kenya today, and the systems are predominantly unreliable.

Other Regional Fiber Projects

¶4. In addition to SEACOM, two regional fiber projects will shortly link East Africa to the internet via broadband: The East African Marine Systems (TEAMS) project and The Eastern Africa Submarine Cable System (EASSy). TEAMS, spearheaded by the GOK, is a $110 million government-initiated special purpose vehicle created to develop a fiber-optic undersea cable connecting the East African region through Kenya to the fiber-optic communications backbone in the United Arab Emirates (UAE). It will extend 4,500 kilometers and will have an initial capacity of 120 GB upgradeable to 1.2 terabits. Kenyan local mobile operators are the majority private shareholders; Dubai Telecom operator Etisalat has a 15% stake in the project.

¶5. The Eastern Africa Submarine Cable System project, EASSy, a $200 million project, is set to lay a 9,900 km fiber optic cable linking countries on the Southern, Eastern and Northern African coastlines to the internet. It is an initiative sponsored by 25 telecommunications operators, mostly African. The EASSy project, delayed by a year, is expected to land in 2010. It will provide the last link to completely encircle Africa with high-capacity fiber optic telecommunications networks.

Benefits of Broadband Access

¶6. According to SEACOM, their fiber optic link will decrease prices for broadband communication to resellers by 80% compared to satellite connectivity, improve reliability, and increase demand for broadband. This will enable Kenya to effectively compete in the knowledge and information society. Other benefits of a reliable broadband connection to Kenya include:

-- Higher quality international communication at lower cost, lower latency, and higher speed.

-- Increased access to information for the average Kenyan, including better access to universities and secondary schools.

-- Increased competitiveness of existing businesses by significantly decreasing communication costs.

-- Creation of new industries (knowledge based industries, business

process outsourcing, call centers, quality assurance testing, distance learning, etc.)

-- Increased economic growth through job creation, increased private and public sector investment.

-- Increased tax revenue that can be used to invest in infrastructure (roads, water, etc.)

Kenya Creates an Enabling Environment

¶7. Kenya has a cohesive policy and the legal and regulatory framework that will enable it to leverage the benefits of its new broadband capabilities. In 2008, Kenya adopted a National ICT Policy and enacted the Kenya Communications Amendment Act. The GOK is continuing to develop regulations that will provide an enabling environment for leveraging the new broadband capacity and improving the ICT sector. The overall ICT Strategy is led by inter-sectoral task groups (drawn from public, private and civil society sectors) working under the oversight of an ICT National Steering Committee. The Kenya Communications Act provides a unified licensing framework. The 2008 Kenya ICT (Amendment) Act, assented to on December 30, 2009, recognizes e-transactions and introduces broadcasting and content regulation. Despite this framework, Kenya does not have the following enabling legislation necessary for fully accessing the benefits of the new broadband access: Public-Private Partnerships (PPP), information access legislation and electronic transaction laws like e-TX legislation, and IPR laws. The Kenya ICT Sector Master Plan (2008-2012) places a heavy emphasis on the Public

Private Partnership (PPP) model as a means to achieving the stated goals with a projected budget of $812.5 million over the five-year period.

¶8. Business Process Outsourcing (BPO) is one of Kenya's Vision 2030 flagship projects and is expected to create 7,500 direct jobs by the year 2012. To support this vision, the GOK plans to amend the Export Processing Zones Act to include BPOs -- exempting them from value added tax, income tax during the first 10 years of existence, and withholding tax on dividends and other payments made to non-residents. Outsourcing firms providing data support, support and back-office operations, and call centers will benefit from new tax break plan.

Opportunities and Challenges

¶9. With the arrival of broadband connectivity, Kenya -- blessed with a convenient time zone (GMT +3) and a large pool of qualified workers -- is positioning itself to be a leading destination for call centers, BPO, software development and other related services in the knowledge sector. In March 2009, the GOK received a KSH 837 million (about $11 million) loan from the Republic of Korea to expand its existing Technology Development Center, and the TEAMS project is expected to attract up to $10 billion worth of investments in the special economic zones in the next three years. Connection to the fiber optic marine cable will provide high speed affordable internet access that will likely increase competitiveness of Kenyan businesses and their ability to export their goods and services. Access to information will increase for the average Kenyan providing educational opportunities for students in universities and secondary schools. Higher quality broadband connection will also allow internet resellers - such as cyber cafes - to provide better access to information for the average Kenyan, thereby increasing opportunities for expanding their knowledge and skills. For example, Kenyans in remote regions will be able to earn on-line degrees without incurring air or bus fares.

¶10. The Kenya Transparency and Communications Infrastructure Project (supported by a $114 million World Bank IDA loan through the Ministry of Information and Communications) will provide E-government applications starting with e-procurement and Land

Information Systems; creating e-government services access points called digital
villages; bandwidth expansion and broadband network support for Universities and Colleges; support for Business Process Outsourcing (ICT sector) and support the newly created Kenya ICT board. Internet Service Providers (ISPs) are expected to benefit from this lucrative data market.

¶11. Lack of experienced and qualified personnel in the ICT sector to manage an increasing number of networks and systems is a significant challenge. Demand for end-user, technical and management training and expatriate workers is expected to intensify in the coming months as Kenya attempts to take advantage of the broadband connectivity. Personal Computers (PCs) and internet equipment are required to tap into the inland fiber optic cable. For resellers and end-users, the "last mile" -- connectivity from the national fiber network to the end-user -- remains a challenge. Kenya telecom providers are expected to supply equipment to end-users as well as provide "last-mile" connectivity through complementary technologies such as 3G; ADSL, WiMax and Wifi however, this last-mile connection will limit the speed, reliability and quality of the internet access. By contrast, businesses and government agencies that are able to connect directly to the national fiber network will be able to take full advantage of the broadband internet capacity.

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